



Analytical Laboratory

Page 1 of 32

13339 Hagers Ferry Road
Huntersville, NC 28078-7929
McGuire Nuclear Complex - MG03A2
Phone: 980-875-5245 Fax: 980-875-4349

Order Summary Report

Order Number: J11100274

Customer Name(s): Bill Kennedy, Melonie Martin, Wayne Chapman, Tom Johnson

Customer Address: 3195 Pine Hall Rd
Mailcode: Belews Steam Station
Belews Creek, NC 28012

Lab Contact: Jason C Perkins **Phone:** 980-875-5348

Report Authorized By: _____ **Date:** 10/28/2011
(Signature)

Program Comments:

Please contact the Program Manager (Jason C Perkins) with any questions regarding this report.

Data Flags & Calculations:

Any analytical tests or individual analytes within a test flagged with a Qualifier indicate a deviation from the method quality system or quality control requirement. The qualifier description is found at the end of the Certificate of Analysis (sample results) under the qualifiers heading. All results are reported on a dry weight basis unless otherwise noted.

Data Package:

This data package includes analytical results that are applicable only to the samples described in this narrative. An estimation of the uncertainty of measurement for the results in the report is available upon request. This report shall not be reproduced, except in full, without the written consent of the Analytical Laboratory. Please contact the Analytical laboratory with any questions. The order of individual sections within this report is as follows:

Job Summary Report, Sample Identification, Technical Validation of Data Package, Analytical Laboratory Certificate of Analysis, Analytical Laboratory QC Reports, Sub-contracted Laboratory Results, Customer Specific Data Sheets, Reports & Documentation, Customer Database Entries, Test Case Narratives, Chain of Custody (COC)

Certification:

The Analytical Laboratory holds the following State Certifications : North Carolina (DENR) Certificate #248, South Carolina (DHEC) Laboratory ID # 99005. Contact the Analytical Laboratory for definitive information about the certification status of specific methods.

Sample ID's & Descriptions:

Sample ID	Plant/Station	Collection Date and Time	Collected By	Sample Description
2011022619	BELEWS	13-Oct-11 10:30 AM	TRAVIS THORNTON	FGD Purge Eff
2011022620	BELEWS	13-Oct-11 10:30 AM	TRAVIS THORNTON	BIOREACTOR 1 INF.
2011022621	BELEWS	13-Oct-11 10:30 AM	TRAVIS THORNTON	BIOREACTOR 1 INF. BLANK
2011022622	BELEWS	13-Oct-11 10:30 AM	TRAVIS THORNTON	BIOREACTOR 2 EFF.
2011022623	BELEWS	13-Oct-11 10:30 AM	TRAVIS THORNTON	BIOREACTOR 2 EFF. BLANK
2011022624	BELEWS	13-Oct-11 10:30 AM	TRAVIS THORNTON	FILTER BLANK
2011022625	BELEWS	13-Oct-11 10:30 AM	TRAVIS THORNTON	Trip Blank
7 Total Samples				

Technical Validation Review

Checklist:

COC and .pdf report are in agreement with sample totals and analyses (compliance programs and procedures).

☒ Yes

☐ No

All Results are less than the laboratory reporting limits.

☐ Yes

☒ No

All laboratory QA/QC requirements are acceptable.

☒ Yes

☐ No

The Vendor Laboratories have been qualified by the Analytical Laboratory

Yes

Report Sections Included:

☒ Job Summary Report

☒ Sample Identification

☒ Technical Validation of Data Package

☒ Analytical Laboratory Certificate of Analysis

☐ Analytical Laboratory QC Report

☒ Sub-contracted Laboratory Results

☐ Customer Specific Data Sheets, Reports, & Documentation

☐ Customer Database Entries

☒ Chain of Custody

☒ Electronic Data Deliverable (EDD) Sent Separately

Reviewed By: DataBase Administrator

Date: 10/28/2011

Certificate of Laboratory Analysis

This report shall not be reproduced, except in full.

Order # J11100274

Site: FGD Purge Eff

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022619

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>Carbonate, Bicarbonate, and Hydroxide Alkalinity</u>							
Hydroxide (OH)	Complete				V_PRISM		
Bicarbonate (HCO ₃)	Complete				V_PRISM		
Carbonate (CO ₃)	Complete				V_PRISM		
<u>NITRITE + NITRATE (COLORIMETRIC)</u>							
Nitrite + Nitrate (Colorimetric)	18	mg-N/L		0.25	EPA 353.2	18-Oct-11 13:18	BGN9034
<u>INORGANIC IONS BY IC</u>							
Bromide	100	mg/L		5	EPA 300.0	24-Oct-11 16:34	JAHERMA
Chloride	6800	mg/L		200	EPA 300.0	24-Oct-11 16:34	JAHERMA
Sulfate	1100	mg/L		200	EPA 300.0	24-Oct-11 16:34	JAHERMA
<u>MERCURY (COLD VAPOR) IN WATER</u>							
Mercury (Hg)	287	ug/L		5	EPA 245.1	21-Oct-11 10:17	AGIBBS
<u>Mercury Dissolved (cold vapor) in Water (Filtered)</u>							
Mercury (Hg)	26.6	ug/L		2.5	EPA 245.1	28-Oct-11 09:58	AGIBBS
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	174	mg/L		0.5	EPA 200.7	25-Oct-11 13:50	DJSULL1
Calcium (Ca)	4060	mg/L		0.1	EPA 200.7	25-Oct-11 13:50	DJSULL1
Lithium (Li)	0.139	mg/L		0.05	EPA 200.7	25-Oct-11 13:50	DJSULL1
Magnesium (Mg)	620	mg/L		0.05	EPA 200.7	25-Oct-11 13:50	DJSULL1
Potassium (K)	50.7	mg/L		1	EPA 200.7	25-Oct-11 13:50	DJSULL1
Sodium (Na)	42.1	mg/L		0.5	EPA 200.7	25-Oct-11 13:50	DJSULL1
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	1490	ug/L		10	EPA 200.8	20-Oct-11 11:59	KRICHAR
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	162	ug/L		10	EPA 200.8	24-Oct-11 11:35	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	EPA 200.8	24-Oct-11 11:35	KRICHAR
Chromium (Cr)	225	ug/L		10	EPA 200.8	24-Oct-11 11:35	KRICHAR
Copper (Cu)	124	ug/L		10	EPA 200.8	24-Oct-11 11:35	KRICHAR
Nickel (Ni)	182	ug/L		10	EPA 200.8	24-Oct-11 11:35	KRICHAR
Selenium (Se)	5320	ug/L		20	EPA 200.8	24-Oct-11 11:35	KRICHAR
Silver (Ag)	92.2	ug/L		10	EPA 200.8	24-Oct-11 11:35	KRICHAR
Zinc (Zn)	238	ug/L		20	EPA 200.8	24-Oct-11 11:35	KRICHAR
<u>SELENIUM SPECIATION</u>							
Vendor Parameter	Complete				V_AS&C		

Certificate of Laboratory Analysis

Page 5 of 32

*This report shall not be reproduced, except in full.***Order # J11100274**

Site: FGD Purge Eff

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022619

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL DISSOLVED SOLIDS</u>							
TDS	17000	mg/L		200	SM2540C	19-Oct-11 13:25	TJA7067
<u>TOTAL SUSPENDED SOLIDS</u>							
TSS	2300	mg/L		250	SM2540D	19-Oct-11 07:55	TJA7067

Site: BIOREACTOR 1 INF.

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022620

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>Carbonate, Bicarbonate, and Hydroxide Alkalinity</u>							
Bicarbonate (HCO ₃)	Complete				V_PRISM		
Carbonate (CO ₃)	Complete				V_PRISM		
Hydroxide (OH)	Complete				V_PRISM		
<u>NITRITE + NITRATE (COLORIMETRIC)</u>							
Nitrite + Nitrate (Colorimetric)	17	mg-N/L		0.25	EPA 353.2	18-Oct-11 13:19	BGN9034
<u>INORGANIC IONS BY IC</u>							
Bromide	95	mg/L		5	EPA 300.0	24-Oct-11 13:40	JAHERMA
Chloride	4500	mg/L		100	EPA 300.0	24-Oct-11 13:40	JAHERMA
Sulfate	800	mg/L		100	EPA 300.0	24-Oct-11 13:40	JAHERMA
<u>MERCURY 1631</u>							
Vendor Parameter	Complete				V_BRAND		
<u>MERCURY (COLD VAPOR) IN WATER</u>							
Mercury (Hg)	37.9	ug/L		2.5	EPA 245.1	21-Oct-11 10:20	AGIBBS
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	163	mg/L		0.5	EPA 200.7	25-Oct-11 13:22	DJSULL1
Calcium (Ca)	3510	mg/L		0.1	EPA 200.7	25-Oct-11 13:22	DJSULL1
Lithium (Li)	0.050	mg/L		0.05	EPA 200.7	25-Oct-11 13:22	DJSULL1
Magnesium (Mg)	561	mg/L		0.05	EPA 200.7	25-Oct-11 13:22	DJSULL1
Potassium (K)	22.1	mg/L		1	EPA 200.7	25-Oct-11 13:22	DJSULL1
Sodium (Na)	39.9	mg/L		0.5	EPA 200.7	25-Oct-11 13:22	DJSULL1

Certificate of Laboratory Analysis

Page 6 of 32

*This report shall not be reproduced, except in full.***Order # J11100274**

Site: BIOREACTOR 1 INF.

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022620

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
TOTAL RECOVERABLE METALS BY ICP-MS							
Arsenic (As)	< 10	ug/L		10	EPA 200.8	24-Oct-11 10:52	KRICHAR
Cadmium (Cd)	< 10	ug/L		10	EPA 200.8	24-Oct-11 10:52	KRICHAR
Chromium (Cr)	12.1	ug/L		10	EPA 200.8	24-Oct-11 10:52	KRICHAR
Copper (Cu)	< 10	ug/L		10	EPA 200.8	24-Oct-11 10:52	KRICHAR
Nickel (Ni)	< 10	ug/L		10	EPA 200.8	24-Oct-11 10:52	KRICHAR
Selenium (Se)	1150	ug/L		10	EPA 200.8	24-Oct-11 10:52	KRICHAR
Silver (Ag)	35.7	ug/L		10	EPA 200.8	24-Oct-11 10:52	KRICHAR
Zinc (Zn)	< 20	ug/L		20	EPA 200.8	24-Oct-11 10:52	KRICHAR

SELENIUM SPECIATION

Vendor Parameter Complete V_AS&C

Site: BIOREACTOR 1 INF. BLANK

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022621

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631</u>							
Vendor Parameter	Complete				V_BRAND		

Site: BIOREACTOR 2 EFF.

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022622

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>Carbonate, Bicarbonate, and Hydroxide Alkalinity</u>							
Bicarbonate (HCO3)	Complete				V_PRISM		
Carbonate (CO3)	Complete				V_PRISM		
Hydroxide (OH)	Complete				V_PRISM		

NITRITE + NITRATE (COLORIMETRIC)

Nitrite + Nitrate (Colorimetric) < 0.01 mg-N/L 0.01 EPA 353.2 18-Oct-11 13:15 BGN9034

INORGANIC IONS BY IC

Bromide	91	mg/L		5	EPA 300.0	24-Oct-11 13:56	JAHERMA
Chloride	6700	mg/L		100	EPA 300.0	24-Oct-11 13:56	JAHERMA
Sulfate	1400	mg/L		100	EPA 300.0	24-Oct-11 13:56	JAHERMA

MERCURY 1631

Vendor Parameter Complete V_BRAND

MERCURY (COLD VAPOR) IN WATER

Mercury (Hg) < 1 ug/L 1 EPA 245.1 21-Oct-11 10:39 AGIBBS

Certificate of Laboratory Analysis

Page 7 of 32

This report shall not be reproduced, except in full.

Order # J11100274

Site: BIOREACTOR 2 EFF.

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022622

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	151	mg/L		0.5	EPA 200.7	25-Oct-11 13:11	DJSULL1
Calcium (Ca)	3430	mg/L		0.1	EPA 200.7	25-Oct-11 13:11	DJSULL1
Lithium (Li)	< 0.05	mg/L		0.05	EPA 200.7	25-Oct-11 13:11	DJSULL1
Magnesium (Mg)	532	mg/L		0.05	EPA 200.7	25-Oct-11 13:11	DJSULL1
Potassium (K)	27.7	mg/L		1	EPA 200.7	25-Oct-11 13:11	DJSULL1
Sodium (Na)	39.4	mg/L		0.5	EPA 200.7	25-Oct-11 13:11	DJSULL1

TOTAL RECOVERABLE METALS BY ICP-MS

Arsenic (As)	< 5	ug/L		5	EPA 200.8	24-Oct-11 10:55	KRICHAR
Cadmium (Cd)	< 5	ug/L		5	EPA 200.8	24-Oct-11 10:55	KRICHAR
Chromium (Cr)	< 5	ug/L		5	EPA 200.8	24-Oct-11 10:55	KRICHAR
Copper (Cu)	< 5	ug/L		5	EPA 200.8	24-Oct-11 10:55	KRICHAR
Nickel (Ni)	< 5	ug/L		5	EPA 200.8	24-Oct-11 10:55	KRICHAR
Selenium (Se)	5.46	ug/L		5	EPA 200.8	24-Oct-11 10:55	KRICHAR
Silver (Ag)	14.4	ug/L		5	EPA 200.8	24-Oct-11 10:55	KRICHAR
Zinc (Zn)	< 10	ug/L		10	EPA 200.8	24-Oct-11 10:55	KRICHAR

SELENIUM SPECIATION

Vendor Parameter Complete V_AS&C

Site: BIOREACTOR 2 EFF. BLANK

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022623

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>MERCURY 1631</u>							
Vendor Parameter	Complete				V_BRAND		

Site: FILTER BLANK

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022624

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>DISSOLVED METALS BY ICP-MS</u>							
Selenium (Se)	4.93	ug/L		1	EPA 200.8	20-Oct-11 11:39	KRICHAR

Certificate of Laboratory Analysis

Page 8 of 32

This report shall not be reproduced, except in full.

Order # J11100274

Site: Trip Blank

Collection Date: 13-Oct-11 10:30 AM

Sample #: 2011022625

Matrix: OTHER

Analyte	Result	Units	Qualifiers	RDL	Method	Analysis Date/Time	Analyst
<u>TOTAL RECOVERABLE METALS BY ICP</u>							
Boron (B)	< 0.05	mg/L		0.05	EPA 200.7	25-Oct-11 12:56	DJSULL1
Calcium (Ca)	0.012	mg/L		0.01	EPA 200.7	25-Oct-11 12:56	DJSULL1
Lithium (Li)	< 0.005	mg/L		0.005	EPA 200.7	25-Oct-11 12:56	DJSULL1
Magnesium (Mg)	< 0.005	mg/L		0.005	EPA 200.7	25-Oct-11 12:56	DJSULL1
Potassium (K)	< 0.1	mg/L		0.1	EPA 200.7	25-Oct-11 12:56	DJSULL1
Sodium (Na)	< 0.05	mg/L		0.05	EPA 200.7	25-Oct-11 12:56	DJSULL1
<u>TOTAL RECOVERABLE METALS BY ICP-MS</u>							
Arsenic (As)	< 1	ug/L		1	EPA 200.8	24-Oct-11 10:18	KRICHAR
Cadmium (Cd)	< 1	ug/L		1	EPA 200.8	24-Oct-11 10:18	KRICHAR
Chromium (Cr)	< 1	ug/L		1	EPA 200.8	24-Oct-11 10:18	KRICHAR
Copper (Cu)	< 1	ug/L		1	EPA 200.8	24-Oct-11 10:18	KRICHAR
Nickel (Ni)	< 1	ug/L		1	EPA 200.8	24-Oct-11 10:18	KRICHAR
Selenium (Se)	5.16	ug/L		1	EPA 200.8	24-Oct-11 10:18	KRICHAR
Silver (Ag)	< 1	ug/L		1	EPA 200.8	24-Oct-11 10:18	KRICHAR
Zinc (Zn)	< 2	ug/L		2	EPA 200.8	24-Oct-11 10:18	KRICHAR
<u>SELENIUM SPECIATION</u>							
Vendor Parameter	Complete				V_AS&C		



Full-Service Analytical &
Environmental Solutions

NC Certification No. 402
SC Certification No. 99012
NC Drinking Water Cert No. 37735

Case Narrative

10/21/2011

Duke Energy Corporation (04)
Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: HAPS/MACT Testing Belews Creek
Project No.: J11100274
Lab Submittal Date: 10/18/2011
Prism Work Order: 1100460

This data package contains the analytical results for the project identified above and includes a Case Narrative, Sample Results and Chain of Custody. Unless otherwise noted, all samples were received in acceptable condition and processed according to the referenced methods.

Data qualifiers are flagged individually on each sample. A key reference for the data qualifiers appears at the end of this case narrative.

Please call if you have any questions relating to this analytical report.

Respectfully,

PRISM LABORATORIES, INC.

VP Laboratory Services

Reviewed By

Data Qualifiers Key Reference:

HT	Sample received and analyzed outside of the hold time.
BRL	Below Reporting Limit
MDL	Method Detection Limit
RPD	Relative Percent Difference
*	Results reported to the reporting limit. All other results are reported to the MDL with values between MDL and reporting limit indicated with a J.

This report should not be reproduced, except in its entirety, without the written consent of Prism Laboratories, Inc.



Client Sample ID	Lab Sample ID	Matrix	Date Sampled	Date Received
2011022619/FGD Purge Eff	1100460-01	Water	10/13/11	10/18/11
2011022620/BioReactor 1 Inf	1100460-02	Water	10/13/11	10/18/11
2011022622/BioReactor 2 Eff	1100460-03	Water	10/13/11	10/18/11

Samples received in good condition at 0.7 degrees C unless otherwise noted.



Duke Energy Corporation (04)
Attn: Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: HAPS/MACT Testing Belews
Creek
Project No.: J11100274
Sample Matrix: Water

Client Sample ID: 2011022619/FGD Purge Eff
Prism Sample ID: 1100460-01
Prism Work Order: 1100460
Time Collected: 10/13/11 10:30
Time Submitted: 10/18/11 16:10

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
pH	6.8 HT	pH Units			1	*SM4500-H B	10/19/11 13:00	JAB	P1J0356
Total Alkalinity	53	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0357
Carbonate Alkalinity	BRL	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0358
Bicarbonate Alkalinity	53	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0359



Duke Energy Corporation (04)
Attn: Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: HAPS/MACT Testing Belews
Creek
Project No.: J11100274
Sample Matrix: Water

Client Sample ID: 2011022620/BioReactor 1 Inf
Prism Sample ID: 1100460-02
Prism Work Order: 1100460
Time Collected: 10/13/11 10:30
Time Submitted: 10/18/11 16:10

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
pH	7.1 HT	pH Units			1	*SM4500-H B	10/19/11 13:00	JAB	P1J0356
Total Alkalinity	39	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0357
Carbonate Alkalinity	BRL	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0358
Bicarbonate Alkalinity	39	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0359



Duke Energy Corporation (04)
Attn: Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: HAPS/MACT Testing Belews
Creek
Project No.: J11100274
Sample Matrix: Water

Client Sample ID: 2011022622/BioReactor 2 Eff
Prism Sample ID: 1100460-03
Prism Work Order: 1100460
Time Collected: 10/13/11 10:30
Time Submitted: 10/18/11 16:10

Parameter	Result	Units	Report Limit	MDL	Dilution Factor	Method	Analysis Date/Time	Analyst	Batch ID
General Chemistry Parameters									
pH	7.1 HT	pH Units			1	*SM4500-H B	10/19/11 13:00	JAB	P1J0356
Total Alkalinity	170	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0357
Carbonate Alkalinity	BRL	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0358
Bicarbonate Alkalinity	170	mg/L	5.0	1.4	1	*SM2320 B	10/19/11 10:50	JAB	P1J0359



Duke Energy Corporation (04)
Attn: Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: HAPS/MACT Testing Belews
Creek
Project No: J11100274

Prism Work Order: 1100460
Time Submitted: 10/18/2011 4:10:00PM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch P1J0356 - NO PREP									
LCS (P1J0356-BS1)				Prepared & Analyzed: 10/19/11					
pH	6.88		pH Units	6.860		100	99-101		
Batch P1J0357 - NO PREP									
Blank (P1J0357-BLK1)				Prepared & Analyzed: 10/19/11					
Total Alkalinity	BRL	5.0	mg/L						
LCS (P1J0357-BS1)				Prepared & Analyzed: 10/19/11					
Total Alkalinity	255	5.0	mg/L	250.0		102	90-110		
LCS Dup (P1J0357-BSD1)				Prepared & Analyzed: 10/19/11					
Total Alkalinity	255	5.0	mg/L	250.0		102	90-110	0	200
Batch P1J0358 - NO PREP									
Blank (P1J0358-BLK1)				Prepared & Analyzed: 10/19/11					
Carbonate Alkalinity	BRL	5.0	mg/L						
LCS (P1J0358-BS1)				Prepared & Analyzed: 10/19/11					
Carbonate Alkalinity	255	5.0	mg/L				90-110		
LCS Dup (P1J0358-BSD1)				Prepared & Analyzed: 10/19/11					
Carbonate Alkalinity	255	5.0	mg/L				90-110	0	200
Batch P1J0359 - NO PREP									
Blank (P1J0359-BLK1)				Prepared & Analyzed: 10/19/11					
Bicarbonate Alkalinity	BRL	5.0	mg/L						



Duke Energy Corporation (04)
Attn: Jay Perkins
13339 Hagers Ferry Road
Huntersville, NC 28078

Project: HAPS/MACT Testing Belews
Creek
Project No: J11100274

Prism Work Order: 1100460
Time Submitted: 10/18/2011 4:10:00PM

General Chemistry Parameters - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	--------------------	-------	----------------	------------------	------	----------------	-----	--------------	-------

Batch P1J0359 - NO PREP

LCS (P1J0359-BS1)

Prepared & Analyzed: 10/19/11

Bicarbonate Alkalinity	255	5.0	mg/L	250.0	102	90-110
------------------------	-----	-----	------	-------	-----	--------

LCS Dup (P1J0359-BSD1)

Prepared & Analyzed: 10/19/11

Bicarbonate Alkalinity	255	5.0	mg/L	250.0	102	90-110	0	200
------------------------	-----	-----	------	-------	-----	--------	---	-----



Duke Energy Analytical Laboratory

Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

1) Project Name	HAPS/MACT Testing Belews Creek	2) Phone No:
2) Client:	Bill Kennedy, Ron Laws, Allen Stowe, Wayne Chapman, Melonie Martin, Tom Johnson	4) Fax No:
5) Business Unit:	6) Process:	Mail Code:
8) Oper. Unit:	9) Res. Type:	10) Resp. Center:

Analytical Laboratory Use Only	
LIMS # J11100274	Method: OTHER
Logged By RA	Date & Time 10/17/11 1305
Samples Originating From NC SC	
SAMPLE PROGRAM Ground Water Drinking Water Waste	
Cooler Temp. (C) 1=Preserv.:1=HCL 2=H2SO4, 3=HNO3 4=Ice 5=None	

Page 8 of 2
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

PRISM
PO#144725

AS&C
PO#133241

Brooks Rand
PO#141391

Complete all
shaded areas.

LAB USE ONLY
11) Lab ID
2011032619
2011032620
2011032621
2011032622
2011032623
2011032624
2011032625
2011032626
2011032627
2011032628
2011032629
2011032630
2011032631
2011032632
2011032633
2011032634
2011032635
2011032636

Customer to complete appropriate columns to right

Se Speciation Bottle	ID	13 Sample Description or ID	Date	Time	Signature	17 Comp.	18 Grab	TDS, TSS	Hg - 245.1	Hg Dissolved, 245.1	Metals*	Se, soluble	Se, Speciation, V_ASC	Hg 1631, V_Brand	Carbonate alkalinity, bicarbonate alkalinity, alkalinity, total (4.5), pH - V_Prism	Chloride, Sulfate, Bromide - Dionex	Nitrate-nitrite, C_NO3NO2	TCLP
		FGD Purge Eff	10/13	10:30	Travis Thorne			1	1	1	1	1	1		1	1	1	
		BioReactor 1 Inf	10/13	10:30	Travis Thorne				1		1		1	1	1	1	1	
		BioReactor 1 Inf Hg Blk											1					
		BioReactor 2 Eff	10/13	10:30	Travis Thorne				1		1		1	1	1	1	1	
		BioReactor 2 Eff Hg Blk											1					
		Filter Blk										1						
		Metals Trip Blk									1		1					
		Filter cake TCLP added to a blank COC per TW RA 10/17/11	10/13	10:30	Travis Thorne			✓										1

Customer to sign & date below - fill out from left to right.

1) Relinquished By Travis Thorne	Date/Time 10/13/11 10:30	2) Accepted By Wayne C. C. C.	Date/Time 10-17-11 0920
3) Relinquished By Wayne C. C. C.	Date/Time 10-17-11 1455	4) Accepted By Kathleen L. Davis	Date/Time 10/17/11 1055
5) Relinquished By K. L. Davis	Date/Time 10/17/11 1300	6) Accepted By	Date/Time
7) Relinquished By K. L. Davis	Date/Time 10/18/11 1505	8) Accepted By L. Davis	Date/Time 10-18-11 1505
9) Seal/Locked By K. L. Davis	Date/Time 10/17/11 1300	10) Seal/Lock Opened By	Date/Time
11) Seal/Locked By Relinquished by David M. Davis	Date/Time 10-17-11 1610	12) Seal/Lock Opened By Travis Thorne	Date/Time 10-18-11 1610

* Metals=TRM/IMS = As, Cd, Cr, Cu, Ni, Se, Ag, Zn TRM/ICP = B, Ca, K, Li, Mg, Na.

Customer, IMPORTANT!
Please indicate desired turnaround.

22 Requested Turnaround

14 Days _____

* 7 Days _____

* 48 Hr _____

* Other _____

Add. Cost Will Apply

10-24-11

0.7

1100460



**APPLIED SPECIATION
AND CONSULTING, LLC**

18804 Northcreek Parkway Bothell, WA, 98011
Tel: (425) 483-3300 Fax: (425) 483-9818
www.appliedspeciation.com

October 25, 2011

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078
(704) 875-5245

Project: HAPS/MACT Testing Belews Creek (LIMS # J11100274)

Dear Mr. Perkins,

Attached is the report associated with four (4) aqueous samples submitted for selenium speciation analysis on October 17, 2011. The samples were received on October 18, 2011 in a sealed cooler at -0.3°C. Selenium speciation analysis was performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS). Any issues associated with the analysis are addressed in the following report.

If you have any questions, please feel free to contact me at your convenience.

Sincerely,

A handwritten signature in black ink that reads "Ben Wozniak". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Ben Wozniak
Project Manager
Applied Speciation and Consulting, LLC

Applied Speciation and Consulting, LLC

Report prepared for:

Jay Perkins
Duke Energy Analytical Laboratory
Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd.
Huntersville, NC 28078

Project: HAPS/MACT Testing Belews Creek (LIMS # J11100274)

October 25, 2011

1. Sample Reception

Four (4) aqueous samples in 125mL HDPE bottles (provided by Applied Speciation and Consulting) were submitted for selenium speciation analysis on October 17, 2011. The samples were received on October 18, 2011 in a sealed container at -0.3°C.

The samples were received in a laminar flow clean hood void of trace metals contamination and ultra-violet radiation. Upon reception, the samples were designated discrete sample identifiers. An aliquot of each sample was filtered (0.45µm) and these filtrates were stored in a secure, monitored cryofreezer (maintained at a temperature of -80°C) until selenium speciation analysis could be performed via ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS).

2. Sample Preparation

All sample preparation is performed in laminar flow clean hoods known to be free from trace metals contamination. All applied water for dilutions and sample preservatives are monitored for contamination to account for any biases associated with the sample results.

Selenium Speciation Analysis by IC-ICP-DRC-MS Prior to analysis, an aliquot of each sample was filtered with a syringe filter (0.45µm) and injected directly into a sealed autosampler vial. No further sample preparation was performed as any chemical alteration of the samples may shift the equilibrium of the system resulting in changes in speciation ratios.

3. Sample Analysis

All sample analysis is preceded by a minimum of a five-point calibration curve spanning the entire concentration range of interest. Calibration curves are performed at the beginning of

each analytical day. All calibration curves, associated with each species of interest, are standardized by linear regression resulting in a response factor. All sample results are **instrument blank corrected** to account for any operational biases associated with the analytical platform.

Prior to sample analysis, all calibration curves are verified using second source standards which are identified as initial calibration verification standards (ICV).

Ongoing instrument performance is identified by the analysis of continuing calibration verification standards (CCV) and continuing calibration blanks (CCB) at a minimal interval of every ten analytical runs.

Selenium Speciation Analysis by IC-ICP-DRC-MS All samples for selenium speciation analysis were analyzed by ion chromatography inductively coupled plasma dynamic reaction cell mass spectrometry (IC-ICP-DRC-MS) on October 19-20, 2011. An aliquot of each sample is injected onto an anion exchange column and mobilized by a basic ($\text{pH} > 7$) gradient. The eluting selenium species are then introduced into a radio frequency (RF) plasma where energy-transfer processes cause desolvation, atomization, and ionization. The ions are extracted from the plasma through a differentially-pumped vacuum interface and travel through a pressurized chamber (DRC) containing a specific reactive gas which preferentially reacts with interfering ions of the same target mass to charge ratios (m/z). A solid-state detector detects ions transmitted through the mass analyzer and the resulting current is processed by a data handling system.

Retention times for each eluting species are compared to known standards for species identification.

4. Analytical Issues

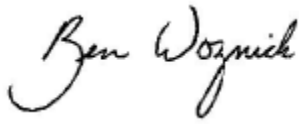
The overall analyses went well and no significant analytical issues were encountered. All quality control parameters associated with these samples were within acceptance limits.

The estimated method detection limits (eMDLs) for selenite, selenate, and selenocyanate are generated from replicate analyses of the lowest standard in the calibration curve. Not all selenium species are present in preparation blanks; therefore, eMDL calculations based on preparation blanks are artificially biased low.

The eMDL for methylseleninic acid and selenomethionine is calculated from the average eMDL of selenite, selenate, and selenocyanate. The calibration does not contain methylseleninic acid or selenomethionine due to impurities in these standards which would bias the results for other selenium species.

If you have any questions or concerns regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Ben Wozniak". The signature is written in a cursive, flowing style.

Ben Wozniak
Project Manager
Applied Speciation and Consulting, LLC

Selenium Speciation Results for Duke Energy
 Project Name: HAPS/MACT Testing Belews Creek
 Contact: Jay Perkins
 LIMS #J11100274

Date: October 25, 2011
 Report Generated by: Ben Wozniak
 Applied Speciation and Consulting, LLC

Sample Results

Sample ID	Se(IV)	Se(VI)	SeCN	MeSe(IV)	SeMe	Unknown Se Species (n)
FGD Purge Eff	14.7	1340	ND (<3.2)	ND (<2.6)	ND (<2.6)	0 (0)
BioReactor 1 Inf	18.5	1110	ND (<0.80)	ND (<0.64)	ND (<0.64)	0 (0)
BioReactor 2 Eff	3.10	ND (<0.61)	ND (<0.80)	ND (<0.64)	ND (<0.64)	0 (0)
Metals Trip Blk	ND (<0.10)	ND (<0.12)	ND (<0.16)	ND (<0.13)	ND (<0.13)	0 (0)

All results reflect the applied dilution and are reported in µg/L

ND = Not detected at the applied dilution

SeCN = Selenocyanate

MeSe(IV) = Methylseleninic acid

SeMe = Selenomethionine

Unknown Se Species = Total concentration of all unknown Se species observed by IC-ICP-MS

n = number of unknown Se species observed

Selenium Speciation Results for Duke Energy
 Project Name: HAPS/MACT Testing Belevs Creek
 Contact: Jay Perkins
 LIMS #J11100274

Date: October 25, 2011
 Report Generated by: Ben Wozniak
 Applied Speciation and Consulting, LLC

Quality Control Summary - Preparation Blank Summary

Analyte (µg/L)	PBW1	PBW2	PBW3	PBW4	Mean	StdDev	eMDL*	eMDL 10x	eMDL 50x	eMDL 200x
Se(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.10	0.51	2.0
Se(VI)	0.000	0.000	0.000	0.000	0.000	0.000	0.012	0.12	0.61	2.4
SeCN	0.000	0.000	0.000	0.000	0.000	0.000	0.016	0.16	0.80	3.2
MeSe(IV)	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.13	0.64	2.6
SeMe	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.13	0.64	2.6

eMDL = Estimated Method Detection Limit

*Please see narrative regarding eMDL calculations

Quality Control Summary - Certified Reference Materials

Analyte (µg/L)	CRM	True Value	Result	Recovery
Se(IV)	LCS	9.57	10.64	111.2
Se(VI)	LCS	9.48	10.48	110.5
SeCN	LCS	8.92	9.449	105.9
MeSe(IV)	LCS	6.47	6.739	104.2
SeMe	LCS	9.32	10.25	110.0

Selenium Speciation Results for Duke Energy
 Project Name: HAPS/MACT Testing Belews Creek
 Contact: Jay Perkins
 LIMS #J11100274

Date: October 25, 2011
 Report Generated by: Ben Wozniak
 Applied Speciation and Consulting, LLC

Quality Control Summary - Matrix Duplicates

Analyte (µg/L)	Sample ID	Rep 1	Rep 2	Mean	RPD
Se(IV)	BioReactor 2 Eff	3.10	2.61	2.9	17.1
Se(VI)	BioReactor 2 Eff	ND (<0.61)	ND (<0.61)	NC	NC
SeCN	BioReactor 2 Eff	ND (<0.80)	ND (<0.80)	NC	NC
MeSe(IV)	BioReactor 2 Eff	ND (<0.64)	ND (<0.64)	NC	NC
SeMe	BioReactor 2 Eff	ND (<0.64)	ND (<0.64)	NC	NC

ND = Not detected at the applied dilution

NC = Value was not calculated due to one or more concentrations below the eMDL

Quality Control Summary - Matrix Spike/ Matrix Spike Duplicate

Analyte (µg/L)	Sample ID	Spike Conc	MS Result	Recovery	Spike Conc	MSD Result	Recovery	RPD
Se(IV)	BioReactor 2 Eff	278.0	291.6	103.8	278.0	289.0	102.9	0.9
Se(VI)	BioReactor 2 Eff	252.3	266.4	105.6	252.3	263.3	104.4	1.2
SeCN	BioReactor 2 Eff	228.8	234.4	102.5	228.8	235.4	102.9	0.4

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM



Duke Energy Analytical Laboratory

Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

Analytical Laboratory Use Only

LIMS # **J11100374** Matrix: **OTHER** Samples Originating From **NC**
Logged By **RA** Date & Time **10/17/11 10:30** Cooler Temp (C) **4**
Preserv.: 1=HCL 2=H₂SO₄ 3=HNO₃ 4=Ice 5=None
SAMPLE PROGRAM **Ground Water** NPDES **UST** RCRA **Waste**

Page 24 of 32

Page 1 of 2
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

Page 1 of 4

1) Project Name **HAPS/MACT Testing**
Belews Creek
2) Client: **Bill Kennedy, Ron Laws, Allen Stowe,**
Wayne Chapman, Melonie Martin, Tom
Johnson
3) Phone No:
4) Fax No:
5) Business Unit:
6) Process:
7) Mail Code:
8) Oper. Unit:
9) Res. Type:
10) Resp. Center:

PRISM
PO#144725

AS&C
PO#133241

Brooks Rand
PO#141391
Complete all
haded areas.

LAB USE ONLY

11) Lab ID

Se Speciation Bottle

ID

13) Sample Description or ID

Date

Time

Signature

17) Comp.

18) Grab

TDS, TSS

Hg - 245.1

Hg Dissolved, 245.1

Metals*

Se, soluble

Se, Speciation, V_ASC

Hg 1631, V_Brand

Carbonate alkalinity,

bicarbonate alkalinity,

alkalinity, total (4.5), pH -

V_Prism

Chloride, Sulfate,

Bromide - Dionex

Nitrate-nitrite, C_NO3/NO2

TCLP

Customer to complete appropriate columns to right

Customer to sign & date below - fill out from left to right.

1) Relinquished By **Travis Thacker** Date/Time **10/17/11 10:30**
2) Accepted By **Wayne C. Brown** Date/Time **10/17/11 09:00**
3) Relinquished By **Wayne C. Brown** Date/Time **10/17/11 10:55**
4) Accepted By **Dafasha L. Davis** Date/Time **10/17/11 10:55**
5) Relinquished By **Dafasha L. Davis** Date/Time **10/17/11 13:00**
6) Accepted By **Dafasha L. Davis** Date/Time **10/17/11 13:00**
7) Relinquished By **Dafasha L. Davis** Date/Time **10/17/11 13:00**
8) Accepted By **Dafasha L. Davis** Date/Time **10/17/11 13:00**
9) Seal/Locked By **Dafasha L. Davis** Date/Time **10/17/11 13:00**
10) Seal/Lock Opened By **Dafasha L. Davis** Date/Time **10/18/11 9:30 Temp: 0.3°C**
11) Seal/Locked By **Dafasha L. Davis** Date/Time **10/17/11 13:00**
12) Seal/Lock Opened By **Dafasha L. Davis** Date/Time **10/18/11 9:30 Temp: 0.3°C**
Comments

Customer, IMPORTANT!
Please indicate desired turnaround.

22) Requested Turnaround

14 Days _____

*7 Days _____

*48 Hr _____

*Other _____
Add. Cost Will Apply

10-24-11

* Metals=TRM/IMS = As, Cd, Cr, Cu, Ni, Se, Ag, Zn TRM/ICP = B, Ca, K, Li, Mg, Na.

October 26, 2011

Duke Energy
ATTN: Jay Perkins
Scientific Support-Laboratory
13339 Hagers Ferry Road
Huntersville NC 28078
jcperkins@duke-energy.com
labcustomer@duke-energy.com

RE: Project DUK-HV1101

Client Project: J11100274

Dear Mr. Perkins,

On October 18, 2011, Brooks Rand Labs (BRL) received two (2) flue gas desulfurization (FGD) wastewater samples and two (2) corresponding blank samples. Samples were logged-in for total mercury (Hg) analysis. All samples were received, prepared, analyzed, and stored according to BRL SOPs and EPA methodology.

The results were blank-corrected as described in the calculations section of the applicable SOP(s) and may be evaluated using adjusted reporting limits to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific detection limits and other details.

BRL, an accredited laboratory, certifies the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more details, see the *Report Information* page of the report.

Please feel free to contact me if you have any questions regarding this report.

Sincerely,



Tiffany Stilwater
Project Manager
tiffany@brooksrn.com

Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	MS	matrix spike
BRL	Brooks Rand Labs	MSD	matrix spike duplicate
BS	laboratory fortified blank	ND	non-detect
CAL	calibration standard	NR	non-reportable
CCV	continuing calibration verification	PS	post preparation spike
COC	chain of custody record	REC	percent recovery
CRM	certified reference material	RPD	relative percent difference
D	dissolved fraction	RSD	relative standard deviation
DUP	duplicate	SCV	secondary calibration verification
ICV	initial calibration verification	SOP	standard operating procedure
MDL	method detection limit	SRM	standard reference material
MRL	method reporting limit	T	total recoverable fraction

Definition of Data Qualifiers

(Effective 9/23/09)

B	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Result is estimated.
J	Estimated value. A full explanation is presented in the narrative.
J-M	Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N	Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M	Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N	Spike recovery was not within acceptance criteria. Result is estimated.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand, Ltd., those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Laboratory Data Validation Functional Guidelines for Evaluating Inorganic Analyses; USEPA; July 2002. These supersede all previous qualifiers ever employed by BRL.

Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
BioReactor 1 Inf	1143014-01	Influent	Sample	10/13/2011	10/18/2011
BioReactor 1 Inf Hg Blk	1143014-02	DIW	Field Blank	10/13/2011	10/18/2011
BioReactor 2 Eff	1143014-03	Effluent	Sample	10/13/2011	10/18/2011
BioReactor 2 Eff Hg Blk	1143014-04	DIW	Field Blank	10/13/2011	10/18/2011

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
Hg	Water	EPA 1631	10/21/2011	10/25/2011	B111723	1100738

Sample Results

Sample	Analyte	Report Matrix	Fraction	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
BioReactor 1 Inf										
1143014-01	Hg	Influent	T	436		75.8	202	ng/L	B111723	1100738
BioReactor 1 Inf Hg Blk										
1143014-02	Hg	DIW	T	0.15	U	0.15	0.41	ng/L	B111723	1100738
BioReactor 2 Eff										
1143014-03	Hg	Effluent	T	44400		76.5	204	ng/L	B111723	1100738
BioReactor 2 Eff Hg Blk										
1143014-04	Hg	DIW	T	0.15	U	0.15	0.40	ng/L	B111723	1100738

Accuracy & Precision Summary

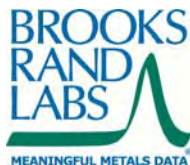
Batch: B111723
Lab Matrix: Water
Method: EPA 1631

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B111723-SRM1	Certified Reference Material (1140052, THg ICV 1641d)						
	Hg		15.68	14.44	ng/L	92% 85-115	
B111723-MS2	Matrix Spike (1143014-01)						
	Hg	436.0	2020	2506	ng/L	102% 71-125	
B111723-MSD2	Matrix Spike Duplicate (1143014-01)						
	Hg	436.0	2020	2473	ng/L	101% 71-125	1% 24

Method Blanks & Reporting Limits

Batch: B111723
Matrix: Water
Method: EPA 1631
Analyte: Hg

Sample	Result	Units
B111723-BLK1	0.04	ng/L
B111723-BLK2	0.0008	ng/L
B111723-BLK3	0.05	ng/L
B111723-BLK4	0.02	ng/L
Average: 0.03		Standard Deviation: 0.02
Limit: 0.50		Limit: 0.10
		MDL: 0.15
		MRL: 0.41



Instrument Calibration

Sequence: 1100738
Instrument: THG-05
Date: 10/25/2011
Analyte: Hg

Total Mercury and Mercury Speciation by CVAFS
Method: EPA 1631

Lab ID	True Value	Result	Units	REC & Limits	
1100738-IBL1		8.42	pg of Hg		
1100738-IBL2		8.90	pg of Hg		
1100738-IBL3		7.23	pg of Hg		
1100738-IBL4		8.50	pg of Hg		
1100738-CAL1	25.00	24.03	pg of Hg	96%	
1100738-CAL2	100.0	99.48	pg of Hg	99%	
1100738-CAL3	500.0	511.0	pg of Hg	102%	
1100738-CAL4	2500	2549	pg of Hg	102%	
1100738-CAL5	10000	10050	pg of Hg	100%	
1100738-ICV1	1568	1444	pg of Hg	92%	85-115
1100738-CCB1		12.1	pg of Hg		
1100738-CCV1	500.0	514.6	pg of Hg	103%	77-123
1100738-CCB2		8.55	pg of Hg		
1100738-CCV2	500.0	497.9	pg of Hg	100%	77-123
1100738-CCB3		37.1	pg of Hg		
1100738-CCV3	500.0	512.1	pg of Hg	102%	77-123

Sample Containers

Lab ID: 1143014-01		Report Matrix: Influent		Collected: 10/13/2011	
Sample: BioReactor 1 Inf		Sample Type: Sample		Received: 10/18/2011	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250mL	71443390	none	n/a
			30	pH Ship. Cont.	
				Cooler	
Lab ID: 1143014-02		Report Matrix: DIW		Collected: 10/13/2011	
Sample: BioReactor 1 Inf Hg Blk		Sample Type: Field Blank		Received: 10/18/2011	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250mL	71443390	none	n/a
			30	pH Ship. Cont.	
				Cooler	
Lab ID: 1143014-03		Report Matrix: Effluent		Collected: 10/13/2011	
Sample: BioReactor 2 Eff		Sample Type: Sample		Received: 10/18/2011	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250mL	71443390	none	n/a
			30	pH Ship. Cont.	
				Cooler	
Lab ID: 1143014-04		Report Matrix: DIW		Collected: 10/13/2011	
Sample: BioReactor 2 Eff Hg Blk		Sample Type: Field Blank		Received: 10/18/2011	
Des	Container	Size	Lot	Preservation	P-Lot
A	Bottle FLPE Hg-T	250mL	71443390	none	n/a
			30	pH Ship. Cont.	
				Cooler	

Shipping Containers

Cooler

Received: October 18, 2011 9:00
Tracking No: 4726 7966 4935 via FedEx
Coolant Type: Ice
Temperature: 2.9 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? No
Custody seals intact? No
COC present? Yes

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

1143014



Duke Energy Analytical Laboratory

Mail Code MGO3A2 (Building 7405)
13339 Hagers Ferry Rd
Huntersville, N. C. 28078
(704) 875-5245
Fax: (704) 875-4349

Analytical Laboratory Use Only

LIMS # J11100274	Matrix: OTHER	Samples Originating From NC SC
Logged By RA	Date & Time	SAMPLE PROGRAM Drinking Water Ground Water NPDES Waste UST RCRA
Cooler Temp (C) 1=Preserv.:1=HCl 2=H ₂ SO ₄ 3=HNO ₃ 4=Ice 5=None		

Page 31 of 32

19 Page 1 of 2
DISTRIBUTION
ORIGINAL to LAB,
COPY to CLIENT

1) Project Name HAPS/MACT Testing Belews Creek	2) Phone No:
2) Client: Bill Kennedy, Ron Laws, Allen Stowe, Wayne Chapman, Melonie Martin, Tom Johnson	4) Fax No:
5) Business Unit:	6) Process:
8) Oper. Unit:	9) Res. Type:
	10) Resp. Center:

**PRISM
PO#144725**

**AS&C
PO#133241**

**Brooks Rand
PO#141391**

Complete all
shaded areas.

Se Speciation Bottle ID	13 Sample Description or ID	Date	Time	Signature	17 Comp.	18 Grab	TDS, TSS	Hg - 245.1	Hg Dissolved, 245.1	Metals*	Se, soluble	Se, Speciation, V_ASC	Hg 1631, V_BRand	Carbonate alkalinity, bicarbonate alkalinity, alkalinity, total (4.5), pH - V_Prism	Chloride, Sulfate, Bromide - Dionex	Nitrate-nitrite, C_NO3/NO2	TCLP
	FGD Purge Eff	10/13	10:30	Travis Thibault			1	1	1	1	1	1		1	1	1	
	BioReactor 1 Inf	10/13	10:30	Travis Thibault				1		1		1	1	1	1	1	
	BioReactor 1 Inf Hg Blk												1				
	BioReactor 2 Eff	10/13	10:30	Travis Thibault				1		1		1	1	1	1	1	
	BioReactor 2 Eff Hg Blk												1				
	Filter Blk										1						
	Metals Trip Blk									1		1					
	Filter cake TCLP	10/13	10:30	Travis Thibault			✓										1

Customer to sign & date below - fill out from left to right.

1) Relinquished By Travis Thibault	Date/Time 10/13/11 10:30	2) Accepted By Michelle C. Cap...	Date/Time 10-17-11 0900
3) Relinquished By Michelle C. Cap...	Date/Time 10-17-11 1055	4) Accepted By Dafosha L. Davis	Date/Time 10/17/11 1055
5) Relinquished By Dafosha L. Davis	Date/Time 10/17/11 1300	6) Accepted By John F. ...	Date/Time 10/18/11 0900
7) Relinquished By	Date/Time	8) Accepted By	Date/Time
9) Seal/Locked By Dafosha L. Davis	Date/Time 10/17/11 1300	10) Seal/Lock Opened By	Date/Time
11) Seal/Locked By	Date/Time	12) Seal/Lock Opened By	Date/Time

Customer, IMPORTANT!
Please indicate desired turnaround.

22 Requested Turnaround

14 Days _____
*7 Days _____
*48 Hr _____

*Other _____
Add. Cost Will Apply

10-24-11

* Metals=TRM/IMS = As, Cd, Cr, Cu, Ni, Se, Ag, Zn TRM/ICP = B, Ca, K, Li, Mg, Na.

Customer must Complete

Customer to complete appropriate columns to right

AS&C
Brand

